

## H. HYDROLOGY AND WATER QUALITY

### ENVIRONMENTAL SETTING

#### *REGIONAL*

Much of the surface water runoff for the region is collected in street drain inlets and conveyed in large underground sewers westward via the Ballona Channel and the 78,000-acre Ballona Creek watershed, which services the heavily urbanized Los Angeles, Culver City, and Beverly Hills areas. Ballona Creek services the north slope of the Baldwin Hills and portions of the Santa Monica Mountains to the north. The eastern extent of the watershed reaches Interstate-110 near downtown Los Angeles. The channel empties into the Santa Monica Bay near the MDR marina and the Ballona Wetlands. As the channel nears the ocean, it becomes a tidally influenced estuary. Along the coast, stormwater and urban runoff are conveyed directly to the beach through local sewers and drainage canals. The City and County of Los Angeles Department of Public Works are responsible for maintaining storm drains to minimize flooding within their jurisdictions. Flooding has been minimized for the region through the construction of storm drains, flood control channels, detention basins, and pumping plants.

Water quality of regional surface water and groundwater resources is affected by point source and non-point source discharges occurring throughout individual watersheds. Regulated point sources, such as wastewater treatment effluent discharges, usually involve a single discharge into receiving waters. Non-point sources involve diffuse and non-specific runoff that enters receiving waters through storm drains or from unimproved natural landscaping. Common non-point sources include urban runoff, agriculture runoff, current and historical resource extraction, and natural drainage. Urban runoff has been proven to be a significant source of pollutants for surface receiving waters. Pollutants in urban runoff include urban debris, suspended solids, bacteria, viruses, heavy metals, pesticides, petroleum hydrocarbons, and other organic compounds. Through the regional Basin Plans, the Regional Water Quality Control Boards (RWQCBs) establish water quality objectives for surface water and groundwater resources and designate beneficial uses for each identified waterbody.

The general quality of groundwater in the district has degraded substantially compared with historic levels. Much of the groundwater degradation reflects the various land uses types including agricultural and urban. Fertilizers and pesticides typically used on agricultural lands can infiltrate and degrade groundwater as will septic systems and leaking underground storage tanks. In addition, when increased withdrawals from groundwater basins exceed sustainable yields, salt water intrusion from the ocean further degrades groundwater quality. Conversely, as impervious surfaces in urban areas increase, the rate of natural surface recharge declines. Groundwater basins are recharged through local precipitation and through imported water applied through injection wells or percolation ponds. Regional groundwater levels are at or near sea level (Chambers, 2000).

## **LOCAL**

### **Playa del Rey Groundwater**

The 34 PDR lots are situated at the northern limits of the El Segundo Sand Hills. These PDR lots are located over the West Coast Groundwater Basin, which is a small groundwater basin within the southwestern part of the Los Angeles County Coastal Plain. The basin is bounded by the Santa Monica Basin to the north, Palos Verdes Hills to the southwest, San Pedro Bay to the southeast, and the Newport-Inglewood Uplift to the east (Brown and Caldwell, 2003).

Depth to first groundwater beneath the project area was estimated at approximately 110 to 150 feet below ground surface based on the Coastal Plain Deep Aquifer Groundwater Contour Map. This map suggests that the local water table exists above the top of the Gage aquifer. The map also indicates that the overall groundwater flow direction within the vicinity of the project sites is northeasterly. No groundwater was encountered at any of the 34 PDR lots during any remedial excavations or subsurface exploratory work to a maximum depth of 34 feet (Brown and Caldwell, 2003).

### **Marina del Rey Groundwater**

Based on past investigations, first encountered groundwater occurs beneath the MDR sites at a depth of about 11 feet, which is at or near sea level. The same investigations suggest that the groundwater is in apparent hydraulic communication with Santa Monica Bay. As a result, the depth to groundwater and groundwater gradient may fluctuate with tidal flows. MDR is located within the Santa Monica Basin of the Coastal Plain of Los Angeles County. The Santa Monica Basin is bounded by the Santa Monica Mountains to the north, the Newport-Inglewood fault to the east, the West Coast Basin to the south and the Santa Monica Bay to the west. The Santa Monica Basin includes six physiographic areas; the Santa Monica Plain; Ocean Park Plain; Sawtelle Plain; and portions of Beverly Hills, Ballona Gap, and Baldwin Hills (DWR, 1961). The two MDR lots lie within the Ballona Gap.

### **Surface Water Hydrology**

Three major surface water bodies are located within one mile from the 36 lots (Brown and Caldwell, 2003). The distance and direction of each surface water body is summarized below in **Table 4.H-1**.

### **Storm Drainage**

The PDR lots are located on the Westchester Bluffs that drain northward on Falmouth Street to the Ballona Wetlands on the southern edge of the channelized Ballona Creek. No underground storm sewers exist in the streets within the project area. For both the PDR and MDR lots, stormwater runoff is collected in gutters and transported offsite. The PDR lots drain to Manchester Avenue and then ultimately to the Ballona Wetlands along Falmouth Street. The MDR lots drain directly westward onto Venice Beach.

**TABLE 4.H-1  
NEARBY SURFACE WATER BODIES**

<b>Surface Water Body</b>	<b>Distance/Direction from PDR</b>	<b>Distance/Direction from MDR</b>
Santa Monica Bay – Pacific Ocean	3,500 feet west	1,000 feet west
Ballona Creek	2,200 feet northwest	1,700 feet southeast
Marina del Rey	2,700 feet northwest	650 feet southeast

SOURCE: Brown and Caldwell, 2003

According to the City of Los Angeles Safety Element, the two lots located in MDR are within a 100-Year flood zone, directly on the beach at an elevation of less than 15 feet above mean sea level (amsl). The PDR properties are approximately 150 feet amsl and not within a flood zone.

### **Tsunami**

Tsunamis are extremely long-period waves often associated with underwater earthquakes. Other mechanisms such as volcanic activity or submarine landslides can also generate tsunamis. Due to its proximity to the Pacific Ocean and its low-lying elevations, the MDR area is subject to potential tsunami hazards. The maximum expected run-up of a tsunami wave in Venice Beach is approximately 9.6 feet in a 100-year time frame from a distant earthquake. Tsunamis generated from local earthquakes may be larger; however, they are less likely to occur.

## **APPLICABLE REGULATIONS, PLANS, AND POLICIES**

### **FEDERAL**

The U.S. EPA is the federal agency responsible for water quality management and administration of the federal Clean Water Act (CWA). The U.S. EPA has delegated most of the administration of the CWA in California to the California State Water Resources Control Board (SWRCB). The SWRCB was established through the California Porter-Cologne Water Quality Act of 1969 and is the primary state agency responsible for water quality management issues in California. Much of the responsibility for implementation of the SWRCB's policies is delegated to the nine RWQCBs.

Section 402 of the CWA established the National Pollutant Discharge Elimination System (NPDES) to regulate discharges into “navigable waters” of the United States. The U.S. EPA authorized the SWRCB to issue NPDES permits in the State of California in 1974. Non-point source NPDES permits are required for municipalities and unincorporated communities of populations greater than 100,000 to control urban stormwater runoff. These municipal permits include Storm Water Management Plans (SWMPs). A key part of the SWMP is the development

of Best Management Practices (BMPs) to reduce pollutant loads. Certain businesses and projects within the jurisdictions of these municipalities are required to prepare Storm Water Pollution Prevention Plans (SWPPPs) which establish the appropriate BMPs to gain coverage under the municipal permit. On October 29, 1999, the U.S. EPA finalized the Storm Water Phase II rule which requires smaller urban communities with a population less than 100,000 to acquire individual storm water discharge permits. The Phase II rule also requires construction activities on one to five acres to be permitted for stormwater discharges.

The RWQCBs also coordinates the State Water Quality Certification program, or Section 401 of the CWA. Under Section 401, states have the authority to review any federal permit or license that will result in a discharge or disruption to wetlands and other waters under state jurisdiction, to ensure that the actions will be consistent with the state's water quality requirements. This program is most often associated with Section 404 of the CWA which obligates the U.S. Army Corps of Engineers to issue permits for the movement of dredge and fill material into and from "waters of the United States."

### ***STATE AND REGIONAL***

California Water Code, Division 7, Chapter 5.6 established a comprehensive program within the SWRCB to protect the existing and future beneficial uses of California's enclosed bays and estuaries. In addition, the RWQCBs conduct water sampling for Water Quality Assessments required by the CWA and for specific priority areas under restoration programs (Los Angeles Department of Water and Power, 2004).

The RWQCBs have prepared Basin Plans, which identify beneficial uses and water quality objectives for each water resource in the state. The SWRCB also issue NPDES permits. The NPDES permits include waste discharge requirements that establish water quality thresholds to maintain designated water quality objectives and beneficial uses. The NPDES permitting program includes stormwater discharges for municipal storm sewer systems, industrial activities, and construction activities. To obtain coverage under the statewide general construction stormwater discharge NPDES permit for a construction site greater than 1 acre, a project proponent must prepare a SWPPP outlining BMPs to be employed to avoid water quality impacts to local receiving waters. In addition, pursuant to Section 303(d) of the CWA, the SWRCB has compiled a list of impaired water bodies in the state. The list includes Ballona Creek, Ballona Estuary, and the Ballona Creek Wetlands, (City of Los Angeles, 2001).

### **SIGNIFICANCE CRITERIA**

A hydrologic or water quality impact would be considered significant if it would result in any of the following, which are adapted from CEQA Guidelines, Appendix G:

- Violate any water quality standards or waste discharge requirements
- Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local

groundwater table level (e.g., the production of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)

- Substantially alter the existing drainage pattern of the site or area, including through alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site
- Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff
- Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map or place within a 100-year flood hazard area structures which would impede or redirect flood flows
- Expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam
- Result in the inundation of seiche, tsunami, or mudflow.

## ENVIRONMENTAL IMPACTS AND MITIGATION

**Impact H.1: Future development of the 36 lots proposed for sale could result in surface water degradation resulting in the introduction of additional pollutants to receiving water and violations to water quality standards or waste discharge requirements. (Less than significant)**

Construction on the lots could produce pollutants that would have the potential to temporarily degrade the quality of receiving waters if not properly managed. The primary pollution of concern is sediment that results from excessive erosion of disturbed soils. Other potential pollutants include metals, pesticides, nutrients and soil additives, construction chemicals and fuel, and miscellaneous waste. No significant long-term impact to water quality is anticipated from construction activities. Once constructed, the development of the lots would not substantially degrade water quality. Although landscaping could increase pesticide and fertilizer usage on the sites, the infill development would not substantially alter the existing residential nature of the two neighborhoods or the quality or character of the runoff. The contribution to urban runoff from each lot would be minimal.

Each lot is covered under the Municipal Separate Storm Sewer (MS4s) NPDES permit held by the County of Los Angeles, the purpose of which is to reduce the discharge of pollutants from MS4s to the maximum extent practicable. In addition, development of the lots could be subject to Phase II NPDES stormwater regulations for construction activities, which apply when there is soil disturbance of 1 acre, or if less than 1 acre, is part of a larger common plan of development that is 1 acre or greater. Since the lots are each less than 1 acre, they would not be subject to the statewide General Construction Storm Water NPDES permit requirements if they were developed separately. However, multiple lots developed at the same time such that the soil disturbance would add up to more than 1 acre would be required to obtain a SWPPP for coverage under the

statewide construction stormwater permit. Complying with state requirements to obtain coverage under the statewide stormwater permit would ensure that no impact to water quality standards or applicable waste discharge requirements would occur (Los Angeles County, 1984).

Since the PDR lots drain indirectly to Ballona Wetlands, development on each individual property may be subject to the Los Angeles RWQCB Standard Urban Storm Water Mitigation Plan (SUSWMP) requirements due to the designated sensitive ecological status of the wetlands. Finalization of the threshold requiring SUSWMP compliance has not yet been finalized. However, at the time of development of the 36 lots proposed for sale, it would be determined whether implementation of a SUSWMP for each site would be required. Implementation of a SUSWMP for the sites would ensure that stormwater runoff rates from each site would not be increased by development, and that urban runoff pollution would be minimized. This would require providing detention basins and potentially treatment systems to capture, reduce flow velocity, and treat the first 3/4 inches of each storm according to the Los Angeles RWQCB requirements. Compliance with the SUSWMP requirements, if applicable, would ensure that stormwater runoff would not violate water quality standards or applicable waste discharge requirements.

**Mitigation:** None required because implementation of Los Angeles RWQCB SUSWMP would be expected to fully mitigate potential impacts from future development on the lots proposed for sale.

---

**Impact H.2: Future development of the 36 lots proposed for sale would increase impervious surfaces and reduce, over pre-project conditions, groundwater infiltration volumes and rates leading to a local reduction in groundwater recharge. (Less than significant)**

Residential and/or commercial development on the 36 lots proposed for sale would replace existing pervious surfaces with impervious surfaces (i.e., pavement and roof tops) and could slightly reduce the volume and rate of local infiltration of stormwater into the groundwater basin. The stormwater basin partly depends on surface water infiltration for recharge of the underlying aquifers. However, the PDR and MDR lots likely do not contribute a significant source of recharge because of their relatively minor, combined surface area and location. The combined surface area of the lots accounts for a small percentage of the surrounding area and reduction of this amount of surface infiltration would have an unmeasurable effect on subsurface groundwater resources. Further, the PDR lots are located on the bluff, which rises approximately 150 feet above surrounding areas and surface water that infiltrates would not likely contribute to significant recharge of the regional aquifer which is more than 150 feet below the bluff. The MDR lots overlie a shallow, tidally-influenced groundwater water table and the contribution to the recharge of the water table is insignificant compared to recharge received from salt and fresh water under flow and other surface infiltration. The infill development of these individual lots would not significantly interfere with groundwater recharge or affect groundwater supplies.

**Mitigation:** None required.

---

**Impact H.3: Future development of the 36 lots proposed for sale would create additional runoff that would contribute to existing runoff volumes and exceed the capacity of existing or planned stormwater drainage systems resulting in onsite flooding and downstream flooding. (Less than significant with recommended mitigation)**

Development on the PDR and MDR lots proposed for sale could increase impervious surfaces (i.e., driveways, sidewalks, etc.) on each lot. This could slightly increase stormwater runoff. The infill development would occur in neighborhoods that have a street drainage system designed to accommodate the 50-year storm pursuant to the City of Los Angeles Department of Public Works design standard.

**Recommended Mitigation Measure H.3: Prior to obtaining a building permit, future developers shall prepare a drainage plan for each site and submit it with the building permit application, as required by the City of Los Angeles Public Works Department.**

The City of Los Angeles would approve each site's drainage plan prior to construction.

**Significance after Recommended Mitigation:** Less than significant.

---

**Impact H.4: Future development of the 36 lots proposed for sale could place residences and commercial buildings within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map. (Less than significant)**

The PDR lots are not located within a designated flood plain. Development in these lots would not place housing in a flood plain. Although the MDR lots are directly on the beach within the 100-year flood plain, development on these two parcels would be subject to City requirements regarding development within a flood plain. Development on these two parcels would alter the flood plain slightly, requiring a letter of flood plain revision to be submitted to the Federal Emergency Management Agency. Designs would require City approval to ensure that flood flows would not adversely affect neighboring structures. The floor of any habitable space would need to be at least one foot above the base flood elevation. Design and construction of the structures would be subject to City approval. As such, the City-approved infill development in the existing neighborhoods located in a flood plain would not be considered a significant impact.

**Mitigation:** None required.

---

**Impact H.5: Future development of the 36 lots proposed for sale would expose people or structures to a significant risk of loss, injury or death involving inundation of tsunami. (Less than significant)**

The PDR lots are not located within a tsunami or risk area. Some sites are located near steep inclines and cliff faces that could produce mudflows. The MDR lots are each located within the City-designated tsunami risk zone. Given the standard conditions set forth in the City of Los Angeles Flood Hazard Specific Plan providing development requirements, and the rare occurrence of such an event, the impact would be considered to be less than significant.

**Mitigation:** None required.

---

## CUMULATIVE IMPACTS

**Impact H.6: Future development of the 36 lots proposed for sale would increase site impervious surfaces and, therefore, add to the amount of runoff. (Less than significant)**

Small local drainage systems and existing culverts in the area will be able to accommodate the increase in runoff due to the development of the area. The hydrologic impacts resulting from future development's incremental stormwater runoff would not have a cumulatively considerable impact because project drainage and flow control features would be implemented according to the approved future development project's drainage plan which would consider other relevant cumulative projects in the area.

**Mitigation:** None required.

---

## REFERENCES – Hydrology and Water Quality

Brown and Caldwell, *Final Sampling and Analysis Plan, Southern California Gas Company Playa del Rey Divestiture Project*, June 6, 2003.

California Department of Water Resources (DWR), "Planned Utilization of the Ground Water Basins of the Coastal Plain of Los Angeles County; Bulletin 104," In *Ground Water Geology*, 1961.

Chambers Group Inc., *Revised Supplement to Proponent's Environmental Assessment (PEA) for the SoCalGas Proposed Sale of Lots at Playa del Rey, California*, August 2000.

City of Los Angeles, *Decade of Progress Wastewater Program, 1990 – 2000*, 2001.

Los Angeles Department of Water and Power, *Green Power for a Green LA*, <http://www.greenla.com/greenpower/index.htm>, accessed February 23, 2004.



Los Angeles County, *Marina del Rey/Ballona Local Coastal Plan Phase II – Land Use Plan*,  
1984.